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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/038,291	01/02/2002	Syamal Kumar Lahiri	11042-004	7028
20583	7590	10/03/2003	EXAMINER	
PENNIE AND EDMONDS 1155 AVENUE OF THE AMERICAS NEW YORK, NY 100362711			BEREZNY, NEMA O	
			ART UNIT	PAPER NUMBER

2813

DATE MAILED: 10/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/038,291

Applicant(s)

LAHIRI ET AL.

Examiner

Nema O Berezny

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 17-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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## DETAILED ACTION

### *Election/Restrictions*

Applicant's election without traverse of claims 1-16 in Paper No. 8 is acknowledged.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5, 7-8, 10-14, and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Takushima (6,454,159). Takushima discloses a method of constructing an electrical contact on an electronic component, comprising providing a protruding electrically conducting core on the component at a site where an interconnection is to be made, and placing the core in contact with molten solder, without using a mask, to form on the core a solder bump which adheres to the core (col.2 line 55 – col.3 line 10); forming the electrically conducting core from a material selected from the group consisting of gold, copper, silver, platinum, palladium and nickel and their alloys (col.5 lines 10-14); forming the electrically conducting core by attaching a metal stud to the

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component at the site where the interconnection is to be made, and attaching the metal stud to a contact pad of the component by wire bonding (col.3 lines 25-45); forming the metal stud from a length of wire which is bonded to a contact pad of the component and which is coated with a material selected from the group consisting of gold, copper, silver, platinum, palladium and nickel and their alloys (col.3 lines 25-45, col.5 lines 10-14); forming the solder bump by dipping the electrically conducting core into a bath of molten solder (col.2 line 55 – col.3 line 10); and forming an electrical contact on a contact pad of one of the components and forming a bond between the contact thus formed and a contact pad of the other component (col.2 line 55 – col.3 line 10).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takushima as applied to claims 1-5 and 6-8 above, and further in view of Lin (6,440,835). Takushima does not disclose coining the metal stud after it has been formed on the component. Lin discloses coining the metal stud after it has been formed on the component (col.14 lines 18-21). Therefore, it would have been obvious to a person skilled in the art at the time of the invention to use the coining of Lin with the

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method of Takushima in order to flatten the head of the bump and make mounting of a substrate, device, or another bump easier.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takushima as applied to claims 1-5, 7-8, and 10-14 above, and further in view of Gutierrez (6,395,983). Takushima does not disclose forming the solder bump by wave soldering. However, Gutierrez discloses soldering leads by wave soldering (col.7 lines 16-18). Therefore, it would have been obvious to a person skilled in the art at the time of the invention to use the wave soldering of Gutierrez with the method of Takushima in order to mass solder several bumps or leads (col.7 lines 16-18).

### ***Conclusion***

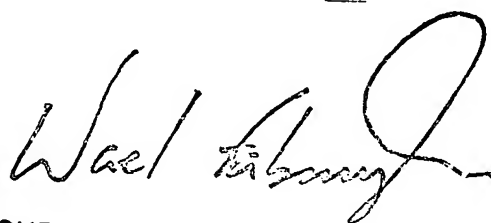
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nema O Berezny whose telephone number is (703) 305-3445. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr. can be reached on (703) 308-4940. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

NB

A handwritten signature in black ink, appearing to read "Wael Tibany". The signature is fluid and cursive, with a large loop at the end.

SUPERVISORY PRIMARY EXAMINER  
TECHNOLOGY CENTER 2000